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The effect of Microsoft Teams on developing Mathematical Thinking Skills among Eighth Grade Students in the State of Kuwait

Dr. Badr Oqlah Al-Enzi
Ministry of Education – State of Kuwait
Curriculum and Instruction
badorenezi2020@gmail.com

Abstract

The study aimed to identify the effect of the Microsoft Teams program on developing mathematical thinking skills among eighth grade students in the State of Kuwait. In this study the researcher used the quasi-experimental approach, and the researcher chose the study members from Abdullah bin Suhail School in the Jahra Governorate by intentional method, as he is an educational supervisor for this school, and the experiment can be easily applied. From the school year 2020/2021, two divisions of the eighth grade were appointed, one of which represented the experimental group, and included (30) students, and the other division represented the control group, and included (30) students. The mathematical thinking skills test was prepared for the eighth grade, and its validity and consistency was confirmed, and the study concluded that there is a statistically significant difference between the average performance of the two study groups according to the different teaching method (Microsoft Teams program, the usual method) on the test of post-mathematical thinking skills for the benefit of the experimental group to which it was applied With the Microsoft Teams program, and based on the results, the study recommended investing positive directions for students and teachers towards e-learning, especially through the Microsoft Teams program, and developing plans and programs to benefit from these directions, and giving training courses in the field of e-learning for both students and teachers.

Keywords: Microsoft Teams, Mathematical Thinking Skills, Eighth Grade, State of Kuwait**.**

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مجلة الدراسات الجامعية للبحوث الشاملة

أثر برنامج ميكروسوفت تيمز (Microsoft Teams) في تنمية مهارات التفكير الرياضي لدى طلاب الصف الثامن في دولة الكويت

د. بدر عقله العنزي
وزارة التربية – دولة الكويت
المناهج وطرق التدريس
E-mail; badorenezi2020@gmail.com

الملخص

هدفت الدراسة التعرف على أثر برنامج ميكروسوفت تيمز (Microsoft Teams) في تنمية مهارات التفكير الرياضي لدى طلاب الصف الثامن في دولة الكويت. استخدم الباحث في هذه الدراسة المنهج شبه التجريبي، واختار الباحث أفراد الدراسة من مدرسة عبدالله بن سهيل في محافظة الجهراء بالطريقة القصدية، كونه مشرف تربوي على هذه المدرسة، ويمكن تطبيق التجربة بسهولة. وجرى تعيين شعبتين من شعب الصف الثامن الأساسي، من العام الدراسي 2021/2020م، لتمثل إحداهما المجموعة التجريبية، وضمت (30) طالبًا، وتمثل الشعبة الأخرى المجموعة الضابطة، وضمت (30) طالبًا. وتم إعداد أختبار مهارات التفكير الرياضي للصف الثامن تم التأكد من صدقه وثباته، وتوصلت الدراسة إلى وجود فرق ذي دلالة إحصائية بين متوسطي أداء مجموعتي الدراسة باختلاف طريقة التدريس (برنامج ميكروسوفت تيمز، الطريقة الاعتيادية) على اختبار مهارات التفكير الرياضي البعدي لصالح المجموعة التجريبية التي طبق عليها بنامج ميكروسوفت تيمز، وبناء على النتائج أوصت الدراسة باستثمار التوجيهات الإيجابية للطلبة وللمعلمين نحو التعليم الإلكتروني خاصة عبر برنامج ميكروسوفت تيمز، ووضع خطط وبرامج للاستفادة من هذه التوجيهات، وإعطاء دورات تدريبية في مجال التعليم الإلكتروني لكل من الطلبة والمعلمين.

الكلمات المفتاحية: برنامج ميكروسوفت تيمز، (Microsoft Teams) ، مهارات التفكير الرياضي ، الصف الثامن، دولة الكويت.

Introduction:

Technological development is a reality today , This fact is specifically reflected in our society, In the fields of labor, social and educational , This technological advancement facilitates and strengthens it. It speeds up the performance of daily tasks, In the educational field, technological progress is reflected in the development of the so-called Information and Communication Technology (ICT) .(Hinojo, Mingorance, Trujillo, Aznar, & Cáceres, M.P, 2018) Information and communication technology directly affects development Teaching and learning processes, as it promotes innovative pedagogical procedures as well They also generate new learning spaces. These educational events reinforce transformation Classrooms as we know them, because they allow removing spatial and temporal barriers, as well To access a large amount of information, in various formats. Also promoted Improving students' motivation, independence, participation and attitude towards education Content (Alonso-García, Aznar-Díaz, Cáceres-Reche, Trujillo-Torres, & Romero-Rodríguez, 2019).

Among the educational procedures based on ICTs is Microsoft Teams program, which is defined as teaching It takes place online, thanks to the use of the Internet and technological devices, whether portable or No, with synchronous or asynchronous communication, from anywhere. So it is e-learning the method becomes an educational tool that facilitates access to learning for the whole community, The "no" method is newly created , as it began in 1993, when it was started To be used more seriously, and to have a greater impact in the field of education . Before that date, Distance learning has been used widely (Garrote, Arenas, & Jiménez, 2018).

Mathematics is considered the queen of the natural sciences and its basis, as the progress in its education and the development in its teaching contribute to the development of various fields, and contribute to the preparation of a conscious and creative generation qualified in knowledge and skills, as teaching mathematics in the third millennium needs to provide an environment rich in mathematical concepts that students need to deal with Its successive variables and successive developments. As the structure of mathematics consists of a conceptual structure, it has its own structure, and is characterized by a coherent fabric of concepts interconnected by various logical relationships that together constitute rules, theories, laws, organization of ideas and thinking. Since mathematical concepts are the basic component of mathematical knowledge, the teaching based on them receives a great degree of interest among educators because of the great impact of these concepts on the development of different types of thinking (Cho, & Cho, 2014).

There is near consensus among researchers on the difference between teaching in emergencies and distance learning in terms of the steps involved in implementation, the quality of the educational content provided, as well as the outcome evaluation mechanism. In the recent period, voices questioning the distance learning process have appeared for some bad experiences in the distance teaching experience, which made them link those obstacles in distance teaching in emergency situations with distance learning in a non-emergency situation. The current stage cannot generalize its disadvantages to a pattern of distance learning, whether it is electronic or mobile learning. It is possible to benefit from successful experiences in the emergency phase and migrate them to normal distance learning. In this sense it is important to benefit by new teachers who teach in a surprising learning environment from lessons learned from the practice of experienced teachers in distance education and who provide high-quality and engaging educational experiences for learners (Khlaif, Z., Nadiruzzaman, H., & Kwon, 2020).

In addition, depending on the nature of the educational material, learners can be assigned to carry out field tasks and write a report on the visit or produce a short video about the visit, write a report on a problem from the student's daily life from the environment related to the lecture, and work on analyzing data and writing perceptions based on that data , Preparing and presenting multimedia presentations, creating info graphics, web pages, blog posts, collections, gathering images related to the lecture (Martin, 2019).

E-learning has an important and fundamental role in the success of the educational process, in light of the great technological development and with the spread of modern means of communication such as computers, the Internet, and multiple media, such as: sound, image, and video, which are means that allowed a large number to receive education easily and easily, and with less Time and effort. (Draissi, & Yong, 2020)

The rapid spread of new COVID-19 outbreak is presenting major challenges to societies across the world, with direct and complex impacts on higher education institutions and systems. We believe there are significant opportunities to learn from the quickly pedagogical plan implemented by Ministry of Education, in order to strengthen the country response to COVID-19 now and into the future, and shedding the light on institutionalizing learning in the areas of crisis/risk management, training, and decision-making in the lenses of the sustainable development education as well as highly embedding the technology into curricula, and investing in scientific research (Draissi, & Yong, 2020).

The pandemic of corona virus boost the educators to teach at home. Trough presidential decree number 7 year 2020 about the task force for acceleration of coagulation covid-19 and minister of empowerment of the state civil apparatus decree number 34 year 2020 which change to circulars the decree number 19 year 2020. This decree contains the instruction to work from home until April 21st, 2020. This condition forces educators to teach the students through online system. Actually, it is not a problem for educators in urban area because they are accustomed to using it.

The problems appear for the educators who are far away from internet network.

It also happens to the students. The problems such as weak signal or even no internet access become disturbances in the process of teaching and learning (Yulia, 2020).

There are many benefits and features provided by e-learning across educational platforms, including Microsoft Teams, which make it superior to traditional educational methods, as follows:

- Reducing costs, as it saves the costs of creating new classrooms to conduct educational courses and seminars, and saves electricity, water and other materials used in the school, in addition to that there is no need to go to schools and educational centers, and this will reduce transportation costs.
- Available for all individuals and age groups. All individuals, regardless of their age, can benefit from the meetings, meetings and courses offered on the Internet, and gain new skills and experiences far from the restrictions of traditional schools.
- Flexibility, as it is not related to a specific time, so individuals can learn at any time they want according to the time that suits them.
- Investing time and increasing learning, as useless interactions between students decrease by reducing chatting and excessive questions that waste time, so the amount of what the student learns increases without any disruptions or hindrances.
- Making education more structured and neutral, in addition to evaluating tests in a neutral and fair way, and accurately following up the achievements of each student.
- Environmentally friendly, as there is no use of papers and pens that may harm the environment when disposing of them (Basilaia, & Kvavadze, 2020).

E-learning practices have been incorporated in the teaching and learning processes. For effective mathematical e-learning, one needs appropriate software as well as well-known learning principles and theories to create mathematics content that fit the learners' needs and the teachers' overall intentions. In developed countries, high internet connectivity has enabled most universities and other teaching institutions to fully embrace e-learning.

Nevertheless, e-learning practices are yet to attain full potential in developing countries, partly due to high initial costs of designing and setting up the platforms as well as low internet connectivity in developing countries (Yong Ahn & Edwin, 2018).

E-learning practices are integrated into the teaching and learning processes. For effective mathematical e-learning, one needs appropriate software as well as well-known learning principles and theories to create mathematics content that suits the learners' needs and the general intentions of the teachers. In developed countries, high internet connectivity has enabled most educational institutions to fully embrace e-learning. However, e-learning practices have not yet achieved their full potential in developing countries, in part due to the high upfront costs of designing and creating the platforms, as well as the decrease in internet connectivity in developing countries. From here, the idea of the study emerged to know the effect of Microsoft Teams on developing mathematical thinking skills among eighth grade students in the State of Kuwait.

The study problem and its questions

The researcher noticed through his work as a supervisor of mathematics for elementary school students in the State of Kuwait, that there is an apparent weakness in the eighth grade students ’understanding of basic skills and concepts in general, and mathematical thinking skills, and that this decline in reality will continue with them to the advanced stages of the study, and the problem of the study lies In the fact that the mathematics teacher is looking for a tool to help him develop mathematical thinking skills among students, especially since the use of applications enhances the educational learning process and increases its effectiveness in the classroom and outside, so the study of (O'Reilly, 2015) recommended the use of electronic applications in education Because it works as an assistant that develops thinking skills, as the study of Abunaji, Al-Meligy, Mansour and Ahmed (2015) recommended attention to educational applications. Because it contains multiple educational programs that contribute to the development of some skills of the learner,

in addition to that, Ghanem's study (2016) recommended the importance of using educational applications, and the need to educate teachers on the use of educational applications, and train them on them. The study problem lies in answering the following question: What is the effect of the Microsoft Teams program on developing mathematical thinking skills among eighth grade students in the State of Kuwait?

Objectives of the study

The study aimed to identify the effect of the Microsoft Teams program on developing mathematical thinking skills among eighth grade students in the State of Kuwait.

The importance of studying

This study can contribute to improving the course of teaching mathematics, by identifying some appropriate ways in which a mathematics teacher can be prepared for the future by integrating constructivism and conceptual and procedural enrichment at the same time in teaching mathematics, because they are essential elements in teaching mathematics, in addition to providing teachers with Mathematics is an effective teaching environment in improving students' mathematical thinking skills, and the results of the study may contribute as a strong indicator towards the methods and teaching components on which mathematics curricula can be built in the future. The importance of this study was also evident in that it dealt with a vital topic in education, which is the distance learning system. And who was not sufficiently studied and researched in education in the State of Kuwait.

The importance of the study lies in the increasingly important role that the distance learning system plays in educational institutions in society, at a time when the challenges facing the education sector are escalating, especially in light of emergency conditions, which makes the subject of its development, and the search for innovative alternatives to improve its internal and external efficiency, An important issue in light of the availability of distance learning technologies, which needs to be evaluated from time to time.

To learn about its effectiveness and the extent of its ability to achieve its goals. The results of this study may benefit those responsible for distance learning, in education, in identifying the effectiveness of the distance learning system, and thus it detects the real reality. In order to identify, improve and develop weaknesses and defects, as well as monitor strengths and work to strengthen them. It also helps in identifying students' attitudes towards distance learning programs, and working on expanding the programs offered, improving their quality, and diversifying the media and technologies required for it.

Conventional and procedural definitions

The following is a definition of some of the terms included in the study:

-Microsoft Teams: It is a platform for cooperation and communication for companies, professional teams, educational and non-educational institutions. Microsoft Teams users can switch between multiple teams on the application, and each has its own members and channels, and is distinguished by the presence of text channels (Chat) that team members can join and follow up, schedule meetings and conference calls, voice and video calls, screen sharing during calls, and share and collaborate on documents in real time.

-Mathematical thinking skills: “One of the modes of thinking that includes a group of mental abilities whose mastery relates to teaching mathematics. It includes skills such as: induction, inference, expressing symbols, visual spatial visualization, and mathematical proof” (Al-Fadhli and Abu Lum, 2019 P. 207).

Mathematical thinking skills are defined procedurally as: a mental activity aimed at using all or some forms of thinking when facing mathematical problems and dealing with various sports exercises, and it is determined by several skills related to mental processes, which are five skills that are: (induction, inference, expression in symbols, and visual visualization Spatial, and mathematical proof), as measured by a test prepared for this purpose.

The limits of the study

The study limits are as follows:

- Objective limits: The effect of Microsoft Teams on developing mathematical thinking skills among eighth grade students in the State of Kuwait.
- Human limits: The study was limited to a sample of eighth grade students in public education schools in the Jahra educational area in the State of Kuwait.
- Spatial boundaries: The field application was carried out on public education schools in the Jahra educational area in the State of Kuwait.
- Temporal limits: This study was applied during the first semester of the 2020/2021 academic year.

Previous studies

- **Al-Malki Study (2016);** The study aimed at identifying the effect of constructivist educational software in developing mathematical thinking skills of second grade intermediate students in Taif. The study used the experimental design. The sample of the study, (48) second grade intermediate students, was divided into two groups: an experimental group and control, with (24) students each, were randomly selected and assigned. The mathematical thinking test was pre-applied to both groups. Then the experimental group studied a unit in engineering and spatial inference using the constructivist educational software while the control group studied via the usual way. Then, at the end of the experiment, the mathematical thinking test was post-applied to both groups. The results of the study showed statistically significant differences between the two groups in favor of the experimental group in the skills of induction, deduction, realizing relationships, and visual spatial perception.

- **Al-Bitar Study (2016);** The purpose of this study was to investigate effectiveness of using of distance learning in developing academic achievement and attitude toward distance learning in instructional technology course for first-year system general diploma industrial education students. The study samples consisted of 32 students specialized in industrial education distributed into one experimental group from first-year system general diploma industrial students, college of education, Assiut University, Egypt. Study tools included, a teacher guide to distance learning in instructional technology course, academic achievement test , an attitude toward distance learning measurement. The content of' instructional technology course was analyzed to determine the learning domains included in course. The tools of the study were administered using a pre-post design on the study group and the appropriate statistical procedures were used. The results of the study indicated that effectiveness of using of distance learning in developing academic achievement and attitude toward distance learning in instructional technology course for first-year system general diploma industrial education students of the experimental group.

- **Jeong Yong, and Akugizibwe, Edwin Study (2018);** Throughout the world, mathematics plays a vital role for the educational and developmental aspirations of any country. The quest to teach mathematical knowledge in a viable and effective way so as to induce creativity and applicability among learners is an ongoing challenge, especially for developing countries. A better understanding of how students learn mathematics coupled with effective application of mathematical e-learning can enhance meaningful learning of mathematics and make the subject more exciting. In this note, we introduce a mathematical e-learning model suitable for the modern digital era based on the learning theories of social constructivism, social realism, and connectivity.

- We then discuss the feasibility of implementing the model on an open source e-learning platform. Our findings reveal that the platform offers a developer's tool for coding and customizing templates to attain higher levels of usage and interactivity in which learners can create and control learning objects while they observe the results.
- **Abd-el Hamid Study (2019);** the study aimed to The effectiveness of functioning cloud-computing applications based on the STEM cognitive integration approach to developing life skills related with learning mathematics among Intermediate school students. This research used semi experimental approach of the two equal groups. The study sample consisted of (72) students of the second grade students in the seventh Intermediate school in Al-Zulfi governorate, Saudi Arabia. The sample was divided into (36) experimental group students and (36) as a control group. The study reached a several results, the most important of which are: -There was a statistically significant difference, between the scores of experimental and control groups in the post application of the mental aspect of life skills test in favor of experimental group. -There was a statistically significant difference between the scores of experimental and control groups in the post application of the social and personal aspects of life skills scale in favor of experimental group. According to the research results we presented some recommendations are: we need to include activities, applications related to students' life and the environment around them in mathematics lessons of Intermediate school students taking into account his needs and interests. In addition to use many applications of cloud computing during teaching to make the mathematical knowledge more enjoyable and interesting. As well as we need to train mathematics teachers to use many Of the applications of cloud computing to design of attitudes and educational experiences that take into account the students' life skills.

- **Alsubhi Study (2019):** The main objective of the study was to identify the effectiveness of using Math illustrations in developing the skills of basic engineering processes in mathematics among middle school students in Yanbu governorate. The semi-experimental approach was used, in line with the objectives of the study. The study sample consisted of (60) female students from the first grade. The study concluded that there were statistically significant differences between the average scores of the students in the experimental group (who studied using Math illustrations) and the averages of the students of the control group (who studied in the usual way) Skill of mathematical thinking skills, and for all skills combined, the differences were in favor of the experimental group. In the light of the findings of the study, the researcher made a number of recommendations, most notably: reviewing the activities associated with the subjects of teaching the engineering skills in the approved mathematics to teach the intermediate stage; focusing on the development of basic engineering skills using Math illustrations, On the use of computerized programs in mathematics, including Math Illustrations, which enable students to use their own skills in directing the processes of thinking and learning, and help them to take personal responsibility for learning; based on the principle of lifelong learning.

- **Alemeshat study (2019);** The current study aimed to measure the effectiveness of using (Todo Math) application in developing the creative thinking skills in the primary school in math subject. The method of semi experimental was used, as the sample was consisted of (52) students, in the second semester of the academic year 2018/2019 from Islamic Education College, in purposive method. The sample was distributed for two groups: first one is experimental group, which consisted of (26) students who learned by using Todo math, and the second one is a control group which consist of (26) students, who learned by ordinary way.

The study revealed that there are statistically significant differences among the average performance of the study groups on Observation card based on creative thinking skills (fluency, flexibility and originality) in favor of the experimental group who learned the mathematics using Todo Math application, and there are no statistically significant differences among the average scores of students attributed to the gender variable. The study recommends using Todo math in developing the skills of creative thinking for students in the primary stage in Math.

- **Aljaser Study (2019);** The study aimed to identify the effectiveness of e-learning environment in developing academic achievement and the attitude towards learning English among the 5th grade primary students. To achieve this purpose, an e-learning environment is designed and an achievement test and a scale for measuring attitude towards learning English are prepared. The quasi-experimental approach was applied to a sample of the 5th grade students, divided into a control group taught through the traditional method and an experimental group taught through an e-learning environment. The achievement test and English learning attitude scale were applied pre- and post- teaching. The study concluded that there were statistically significant differences in favor of the experimental group in both the post-achievement test and English learning attitude scale.

Study Approach

In this study, the researcher used the quasi-experimental method, in order to answer the study questions.

Study personnel

The researcher chose the study members from Abdullah bin Suhail School in Al-Jahra governorate in the intentional way, as he is an educational supervisor for this school, and the experiment can be easily applied. From the school year 2020/2021, two divisions of the eighth grade were appointed, one of which represented the experimental group, and included (30) students, and the other division represented the control group, and included (30) students.

Study tool

The researcher prepared a mathematical thinking skills test for the eighth grade:

The test preparation went through the following steps:

1) Defining the subject: It is the fourth study unit of the eighth grade mathematics book (unit of congruence and similarity of triangles).
2) Determining the purpose of the test: The aim of the test is to identify the effect of the Microsoft Teams program on developing mathematical thinking skills among eighth grade students in the State of Kuwait.
3) Content analysis: The researcher analyzed the content of the unit of congruence and similarity of triangles from the eighth-grade mathematics book, Part 1, as the researcher analyzed the content according to an inventory of mathematical thinking skills in the content for use in preparing the test.
4) Formulation of test questions: Questions for examining mathematical thinking skills have been identified; Accordingly, the researcher formulated the test questions so that each question includes an answer, and it has been taken into account as much as possible that the test questions are free of ambiguity and suitable for the level of eighth graders.
5) Assessment of test scores: Since the questions of the Mathematical Thinking Skills Test were questions requiring a mathematical solution, and drawing in some questions, this required that the question mark be of (10) marks, and a set of criteria was adopted to correct students ’answers, so that each criterion is given Among the criteria for the solution is one or two marks for some of the criteria, and the following criteria were taken into account in the correction process: identifying the required question correctly, identifying all the data correctly, determining the rule necessary to solve the question, writing that rule correctly, solving the question properly, and making sure of The solution.

6) Exploratory application of the test: The researcher applied the mathematical thinking skills test to an exploratory sample of (20) students of the eighth grade from outside the study members, and the aim of the application were to determine the test time, the parameters of difficulty and discrimination, and the test stability.
7) Difficulty coefficients and discrimination: The difficulty and discrimination factors were calculated for the test, and the difficulty coefficients ranged between (0.37-0.72), and the discrimination coefficients ranged between (0.32-0.63), and these values are educationally acceptable, and therefore all questions are acceptable.
8) Exam time: the time students took the test were calculated by calculating the arithmetic average of the first and last student's response time, so the average was approximately (35) minutes.
9) The final image of the test: The researcher prepared the test in its final form, after making adjustments made by the referees, to make it ready for application to the study members.
10) Test validity: The researcher used two methods to verify the validity of the test:

- **The veracity of the referees**: The researcher presented the test in its initial form to the group of arbitrators themselves to express their opinions and suggestions about the extent to which the test represented mathematical thinking skills, the extent to which the test paragraphs covered the educational content, the extent of the scientific and spelling validity of the test items. In its entirety, with linguistic comments.

-**Validity of internal consistency**: Correlation coefficients were used between each paragraph and the overall score for testing visual thinking skills, which ranged between (0.79 - 0.84), and all of them were acceptable and a function at the level of significance ($\alpha = 0.01$)

-**Test stability**: To verify the stability of the two tests, the test-retest method was used. The two tools were applied to the pilot sample with a time interval of two weeks, and the reliability coefficient was calculated using the Pearson correlation coefficient, and the internal consistency method was used using the Quodor Richtson equation. 20, for testing visual thinking, and the reliability factor was (0.87) in the first method, and (0.81) in the second method.

As for the test of understanding life applications, the stability factor was (0.79) using the Pearson correlation coefficient, and (0.83) using Cronbach's alpha. All of these values are acceptable.

Study variables

The study included the following variables:

The independent variable: the method of teaching and it has two levels:

- The usual way
- Teaching using Microsoft Teams.

Dependent variable: Mathematical thinking skills

Statistical treatment

To answer the study questions, arithmetic means and standard deviations were extracted, and an analysis of covariance (ANCOVA) was performed.

Study design

The study followed the following quasi-experimental design:

O1 x O1 EG:

O1 - O1 CG:

As: EG: experimental group CG: control group, :×Teaching with Microsoft Teams O1: Test of Mathematical Thinking Skills

Results related to the first question: What is the impact of Microsoft Teams on developing mathematical thinking skills among eighth grade students in the State of Kuwait?

To answer this question, the arithmetic averages and standard deviations of the performance of the members of the two study groups were calculated according to the different teaching method (Microsoft Teams program, the usual method) on the post-mathematical thinking skills test, and the following table illustrates this:

Table (1) Arithmetic averages and standard deviations of the performance of the two study groups on testing the dimensional mathematical thinking skills and their pre-marks according to the different teaching method (Microsoft program, the usual method)

Post test		The pretest		The total score	the number	the group
standard deviation	SMA	standard deviation	SMA			
1.85	9.90	2.06	7.03	15th	30	Control
1.16	13.60	2.10	7.50		30	Experimental

Table (1) indicates that the arithmetic mean of the experimental group students who studied using the Microsoft Teams program on the dimensional mathematical thinking skills test was the highest, reaching (13.60), while the arithmetic average of the control group students who studied using the regular method was (9.90). If the difference between the averages of the two study groups was statistically significant at the level of significance ($0.05 = \alpha$), the accompanying analysis of variance (ANCOVA) was applied, and the results of the analysis came as shown in Table (2)

Table (2); Analysis of the variance associated with the performance of the two study groups on testing the dimensional mathematical thinking skills by the different teaching method (Microsoft Teams program, the usual method)

ETA value	Indication level	Value (P(	Average sum of squares	Degrees Freedom	Sum of squares	The source of the contrast
	0.000	**60.022**	**70.73**	**1**	**70.73**	The pretest
0.324	**0.000**	**149.73**	**176.444**	**1**	**176.444**	Teaching method
			1.178	**57**	**67.17**	The error
				59	**343.25**	Adjusted total

*The difference is statistically significant

Table (2) indicates that the value of (P) for the teaching method reached (149.73), at a level of significance (0.000), which indicates the existence of a statistically significant difference between the average performance of the two study groups according to the different teaching method (Microsoft Teams program, the usual method). Test of dimensional mathematical thinking skills, and in order to know in favor of who the difference was, the modified arithmetic averages were extracted for the performance of the two study groups on the test of dimensional mathematical thinking skills, and Table (3) shows those averages.

Table (3) The modified arithmetic averages and standard errors of the performance of the two study groups on the dimensional mathematical thinking skills test according to the different teaching method (Microsoft Teams program, the usual method)

Standard error	SMA the average	The total score	the number	the group
0.20	10.02	15th	30	Control
0.20	13.48		30	Experimental

Table (3) indicates that the adjusted arithmetic mean of the experimental group students who studied using Microsoft Teams program on the dimensional mathematical thinking skills test was the highest, reaching (13.48), while the arithmetic average of the control group students who studied using the standard method was (10.02). It means that the difference was in favor of the average of the experimental group students when compared with the average of the control group students, and the effect of the teaching method was (0.324), which means that a percentage (32.4%) of the variance in mathematical thinking skills was the result of the teaching method, and that the rest is a result of factors And variables not discussed in the current study, and this means that there is an effect of the Microsoft Teams program on mathematical thinking skills among eighth grade students in the State of Kuwait.

These results indicate that the use of Microsoft Teams program improved the level of mathematical thinking of the students, and this may be attributed to their feeling of enjoyment and entertainment while using blended learning in the math class more than the traditional method of teaching, this type of learning encourages more communication between the teacher and the student. And determines the role of each of them during the learning process, so the teacher gives instructions and instructions before starting the program and explains the tasks to be accomplished and directs them during the lesson, which increases their self-confidence.

Start attending the class through the Microsoft Teams program, and the use of this program provides an opportunity for self-learning, so that the Microsoft Teams program provides quick feedback compared to the traditional method of teaching, and allows students to exchange experiences during the class and this is completely different from what is practiced during the use of the traditional method of teaching from a daily routine In explaining different mathematical concepts, the program enhances the traditional method of teaching and gives it a kind of flexibility.

Recommendations:

Based on the results, the study recommended the following:

- Investing the positive directions for students and teachers towards e-learning, especially through the Microsoft Teams program, and developing plans and programs to benefit from these directives, and giving training courses in the field of e-learning for both students and teachers.
- Training and encouraging teachers to communicate with students through electronic pages and e-mail, given that many students have Internet service at home.
- Emphasizing the need for attention by the Ministry of Education to introduce the method of e-learning in school education, and to spread electronic culture among students to achieve maximum interaction with this type of education.
- Providing an appropriate educational structure for implementing e-learning in schools and removing all human, material and technical obstacles that prevent it from spreading in the educational system in various stages and fields.

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